

WHAT IS CLAIMED IS:

1 1. A process for treating a chromate waste liquid
2 containing an organic acid component, said process comprising:
3 adding a chromium precipitation accelerating agent
4 comprising at least one of a calcium component and a
5 magnesium component, to said chromate waste liquid; and
6 adjusting said chromate waste liquid to having a first
7 pH of 9 or higher, thereby precipitating a chromium component
8 from said chromate waste liquid and thereby reducing a
9 concentration of a dissolved chromium component of said
10 chromate waste liquid.

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1 2. A process according to claim 1, wherein said chromium
2 precipitation accelerating agent comprises at least one of a
3 calcium-containing inorganic compound and a
4 magnesium-containing inorganic compound

1 3. A process according to claim 1, wherein said chromium
2 precipitation accelerating agent comprises at least one
3 compound selected from the group consisting of $\text{Ca}(\text{OH})_2$, CaCl_2
4 and MgCl_2 .

1 4. A process according to claim 1, wherein said adjusting is
2 conducted by adding said chromium precipitation accelerating
3 agent and a basic pH adjusting agent, which is different from
4 said chromium precipitation accelerating agent, to said
5 chromate waste liquid

1 5. A process according to claim 4, wherein said basic pH
2 adjusting agent comprises at least one compound selected from
3 the group consisting of NaOH, KOH and LiOH

1 6. A process according to claim 1, wherein, prior to said
2 adding, a chromium concentration of said chromate waste
3 liquid is from 10 to 1,000 ppm by weight.

1 7. A process according to claim 1, wherein said chromium
2 precipitation accelerating agent comprises CaCl_2 and is added
3 to said chromate waste liquid such that calcium of said CaCl_2 is
4 in an amount of 500-1,000 mg per liter of said chromate waste
5 liquid.

1 8. A process according to claim 1, wherein said chromium
2 precipitation accelerating agent comprises MgCl_2 and is added
3 to said chromate waste liquid such that magnesium of said
4 MgCl_2 is in an amount of 200-500 mg per liter of said chromate
5 waste liquid.

1 9. A process according to claim 1, wherein said chromate
2 waste liquid is stirred, after said adding of said chromium
3 precipitation accelerating agent.

1 10. A process according to claim 9, wherein said chromate
2 waste liquid is stirred for a period of time from 0.5 to 2 hr.

1 11. A process according to claim 1, wherein said chromate
2 waste liquid comprises a zinc component, and wherein, after
3 said adjusting, said first pH of said chromate waste liquid is
4 decreased to a second pH that is 8 or higher, thereby
5 decreasing a zinc concentration of said chromate waste liquid.

1 12. A process according to claim 1, wherein said adjusting is
2 conducted, while said chromate waste liquid is maintained at a
3 temperature of 20°C or higher.

1 13. A process according to claim 12, wherein said
2 temperature is 25°C or higher.

1 14. A process according to claim 13, wherein said
2 temperature is 30°C or higher.

1 15. A process according to claim 1, further comprising:
2 maintaining said chromate waste liquid at said first pH
3 for a period of time of 0.5 hr or longer; and
4 adding a high-molecular coagulant to said chromate
5 waste liquid, thereby accelerating said precipitation of said
6 chromium component.

1 16. A process according to claim 15, wherein said
2 high-molecular coagulant comprises polyacrylamide.

1 17. A process according to claim 2, wherein said chromium
2 precipitation accelerating agent comprises said
3 calcium-containing inorganic compound, and
4 wherein said precipitated chromium component is
5 separated from said chromate waste liquid, and then said
6 chromate waste liquid is neutralized with an acid that is
7 reactive with a calcium component dissolved in said chromate
8 waste liquid, thereby turning said dissolved calcium component
9 into a calcium-containing precipitate.

1 18. A process according to claim 2, wherein said chromium
2 precipitation accelerating agent comprises said
3 magnesium-containing inorganic compound, and
4 wherein said precipitated chromium component is
5 separated from said chromate waste liquid, then said chromate
6 waste liquid is neutralized with an acid, and then a dissolved

7 magnesium component is removed from said chromate waste
8 liquid by a reverse osmosis or an ion exchange.

1 19. A process according to claim 18, wherein said acid is
2 such that said dissolved magnesium component remains in a
3 dissolved form even after said neutralization

1 20. A process according to claim 1, further comprising
2 maintaining said chromate waste liquid at said first pH, while
3 said chromate waste liquid is stirred.

1 21. A process according to claim 1, wherein said first pH is
2 from 9 to 12.5.

1 22. A process according to claim 21, wherein said first pH is
2 from 10 to 12.5.

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